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Membrane transport of inorganic acids with α-aminophosphoryl compounds

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Abstract

Transport of some inorganic acids (HCl, HBr, HClO4, HNO 3, H2SO4, and H2PO4) through hydrophobic impregnated membranes with aminophosphoryl compounds of the general formula R 2 1 P(O)CH2•NR 2R3 [R1 = C4H9(C 2H5)CHCH2O, R2 = C4H 9, R3 = C8H17; R1 = R3 = C8H17, R2 = H; R1 = C10H2, R2 = R3 = C2H 5; R1 = C10H21, R2 + R3 = (CH2)2O(CH2)2; R1 = C8H17, R2 = H, R3 = 2-quinolyl] and dodecylamine as carriers was studied. The membrane phases were solutions of the carriers in phenylcyclohexane and tridecane. General regularities that correlate the structure of an aminophosphoryl compounds to its transport properties toward inorganic acids were established. The largest flows are characteristic of perchloric, nitric, and hydrobromic acids. ©2005 Pleiades Publishing, Inc.

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